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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/780,066	02/17/2004	Jeffrey J. DeGroot	D-2778Div1/WOD	2238

7590 01/25/2008

William O'Driscoll - 12-1
Trane
3600 Pammel Creek Road
La Crosse, WI 54601

EXAMINER	
LEWIS, DAVID LEE	

ART UNIT	PAPER NUMBER
2629	

MAIL DATE	DELIVERY MODE
01/25/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/780,066	DEGROOT ET AL.	
	Examiner	**Art Unit**	
	David L. Lewis	2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on *17 February 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *17-39,70-90 and 102-112* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *17-39,70-90 and 102-112* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *2/17/2004*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. **Claims 17-39, 70-90, and 102-112 are rejected under 35 U.S.C. 102(b) as being anticipated by Kent (5591945).**

As in claim 17, Kent teaches of in a touch-screen display system for generating pixel coordinate estimates responsive to a user touching a display screen, **figures 5-7,column 31 lines 35-67**,

an apparatus for generating and validating said pixel coordinate estimates, comprising: a processor to determine a first valid pixel coordinate estimate for a first touch-screen axis of said touch-screen display system before determining a second valid pixel coordinate estimate for a second touch-screen axis of said touch-screen display system, **figure 5 item 72, figure 6 item 100, 128 and 140.**

As in claim 18, Kent teaches wherein said processor is adapted to power on said first touch-screen axis of said touch-screen display system and to power off said second touch-screen axis of said touch-screen display system, figure 5 item 80.

As in claim 19, Kent teaches wherein said first touch-screen axis is an x-axis and said second touch-screen axis is a y-axis, figure 5 item 80, figure 6 item 100 and 128.

As in claim 20, Kent teaches wherein said processor is adapted to generate a first pixel coordinate estimate corresponding to said first touch-screen axis and a second pixel coordinate estimate corresponding to said first touch-screen axis such that said first pixel coordinate estimate and said second pixel coordinate estimate are separated in time by a pre-determined sampling interval, figure 6 items 124 and 128, wherein the estimates occur sequentially one after the other having a pre-determined interval based on the shown algorithm.

As in claim 21, Kent teaches wherein said processor is responsive to said first pixel coordinate estimate of said first touch-screen axis and said second pixel coordinate estimate of said first touch-screen axis to generate a first comparison parameter value, figure 6 items 120 and 134.

As in claim 22, Kent teaches wherein said processor is adapted to read a pre-determined first threshold value, column 33 lines 1-35.

As in claim 23, Kent teaches wherein said processor is adapted to compare said first comparison parameter value to said pre-determined first threshold value, column 33 lines 1-35.

As in claim 24, Kent teaches wherein said processor is adapted to select said second pixel coordinate estimate of said first touch-screen axis as a first valid pixel coordinate estimate of said first touch-screen axis if said first comparison parameter value is in a first definite relationship to said pre-determined first threshold value, figure 6 items 126, 128 138.

As in claim 25, Kent teaches wherein said processor is adapted to define said first valid pixel coordinate estimate as invalid if said first comparison parameter value is in a second definite relationship to said pre-determined first threshold value, figure 6 item 124.

As in claim 26, Kent teaches wherein said processor is adapted to make, at most, a pre-determined number of attempts to generate and select said first valid pixel coordinate estimate, figure 6 item 124.

As in claim 27, Kent teaches wherein said processor is adapted to define a "no touch" state as being detected and to generate a "no touch" parameter value to indicate said "no touch" state as being detected when said first valid pixel coordinate estimate is defined as invalid, column 33 lines 44-49.

As in claim 28, Kent teaches wherein said processor is adapted to define said "no touch" state as being detected by generating a "no touch" parameter value to indicate said "no touch" state as being detected if said pre-determined number of attempts is reached and said processor still defines said first valid pixel coordinate estimate as invalid, column 33 lines 44-49.

As in claim 29, Kent teaches wherein said processor is adapted to power on said second touch-screen axis of said touch-screen display system and to power off said first touch-screen axis of said touch-screen display system, figure 5 item 80.

As in claim 30, Kent teaches wherein said processor is adapted to generate a first pixel coordinate estimate corresponding to said second touch-screen axis and a second pixel coordinate estimate corresponding to said second touch-screen axis such that said first pixel coordinate estimate and said second pixel coordinate estimate are separated in time by a pre-determined sampling interval, figure 6, column 33 lines 1-67.

As in claim 31, Kent teaches wherein said processor is responsive to said first pixel coordinate estimate of said second touch-screen axis and said second pixel coordinate estimate of said second touch-screen axis to generate a second comparison parameter value, figure 6, column 33 lines 1-67.

As in claim 32, Kent teaches wherein said processor is adapted to read a pre-determined second threshold value, figure 6, column 33 lines 1-67.

As in claim 33, Kent teaches wherein said processor is adapted to compare said second comparison parameter value to said pre-determined second threshold value, figure 6, column 33 lines 1-67.

As in claim 34, Kent teaches wherein said processor is adapted to select said second pixel coordinate estimate of said second touch-screen axis as a second valid pixel coordinate estimate of said second touch-screen axis if said second comparison parameter value is in a first definite relationship to said pre-determined second threshold value, figure 6, column 33 lines 1-67.

As in claim 35, Kent teaches wherein said processor is adapted to define said second valid pixel coordinate estimate as invalid if said second comparison parameter value is in a second definite relationship to said pre-determined second threshold value, figure 6, column 33 lines 1-67.

As in claim 36, Kent teaches wherein said processor is adapted to generate and select said first valid pixel coordinate estimate corresponding to said first touch-screen axis before making another attempt to generate and select said second valid pixel coordinate estimate corresponding to said second touch-screen axis, figure 6, column 33 lines 1-67.

As in claim 37, Kent teaches wherein said processor is adapted to make, at most, a pre-determined number of attempts to generate and select said second valid pixel coordinate estimate, figure 6, column 33 lines 1-67.

As in claim 38, Kent teaches wherein said processor is adapted to define a "no touch" state as being detected and to generate a "no touch" parameter value to indicate said "no touch" state as being detected when said second valid pixel coordinate estimate is defined as invalid, figure 6, column 33 lines 1-67.

As in claim 39, Kent teaches wherein said processor is adapted to define said "no touch" state as being detected by generating a "no touch" parameter value to indicate said "no touch" state as being detected if said pre-determined number of attempts is reached and said processor still defines said second valid pixel coordinate estimate as invalid, figure 6, column 33 lines 1-67.

As in claim 70, Kent teaches in a touch-screen display system for generating pixel coordinate estimates responsive to a user touching a display screen, **figures 5-7,column 31 lines 35-67**,

a method for generating and validating said pixel coordinate estimates comprising: generating and determining the validity of a first valid pixel coordinate estimate for a first touch-screen axis of said touch-screen display system before generating and determining the validity of a second valid pixel coordinate estimate for a second touch-screen axis of said touch-screen display system, **figure 5 item 72, figure 6 item 100, 128 and 140**.

As in claim 71, Kent teaches further comprising powering on said first touch-screen axis of said touch-screen display system and powering off said second touch-screen axis of said touch-screen display system, figure 5 item 80.

As in claim 72, Kent teaches wherein said first touch-screen axis is an x -axis and said second touch-screen axis is a y –axis, column 32 lines 53-67.

As in claim 73, Kent teaches further comprising generating a first pixel coordinate estimate corresponding to said first touch-screen axis and a second pixel coordinate estimate corresponding to said first touch-screen axis such that said first pixel coordinate estimate and said second pixel coordinate estimate are separated in time by a pre-determined sampling interval, figure 6 items 124 and 128, wherein the estimates occur sequentially one after the other having a pre-determined interval based on the shown algorithm.

As in claim 74, Kent teaches further comprising generating a first comparison parameter value from said first pixel coordinate estimate of said first touch-screen axis

and said second pixel coordinate estimate of said first touch-screen axis, figure 6, column 32 lines 53-67, column 33 lines 1-67.

As in claim 75, Kent teaches further comprising comparing said first comparison parameter value to a pre-determined first threshold value, figure 6, column 32 lines 53-67, column 33 lines 1-67.

As in claim 76, Kent teaches further comprising selecting said second pixel coordinate estimate of said first touch-screen axis as a first valid pixel coordinate estimate of said first touch-screen axis if said first comparison parameter value is in a first definite relationship to said pre-determined first threshold value, figure 6, column 32 lines 53-67, column 33 lines 1-67.

As in claim 77, Kent teaches further comprising defining said first valid pixel coordinate estimate as invalid if said first comparison parameter value is in a second definite relationship to said pre-determined first threshold value, figure 6, column 32 lines 53-67, column 33 lines 1-67.

As in claim 78, Kent teaches further comprising making, at most, a pre-determined number of attempts to generate and select said first valid pixel coordinate estimate, figure 6, column 32 lines 53-67, column 33 lines 1-67.

As in claim 79, Kent teaches further comprising defining a "no touch" state as being detected and generating a "no touch" parameter value to indicate said "no touch" state

as being detected when said first valid pixel coordinate estimate is defined as invalid, figure 6, column 32 lines 53-67, column 33 lines 1-67.

As in claim 80, Kent teaches further comprising a "no touch" state as being detected by generating a "no touch" parameter value to indicate said "no touch" state as being detected if said pre-determined number of attempts is reached and said first valid pixel coordinate estimate is still defined as invalid, figure 6, column 32 lines 53-67, column 33 lines 1-67.

As in claim 81, Kent teaches further powering on said second touch-screen axis of said touch-screen display system and powering off said first touch-screen axis of said touch-screen display system, figure 6, column 32 lines 53-67, column 33 lines 1-67.

As in claim 82, Kent teaches further generating a first pixel coordinate estimate corresponding to said second touch-screen axis and a second pixel coordinate estimate corresponding to said second touch-screen axis such that said first pixel coordinate estimate and said second pixel coordinate estimate are separated in time by a pre-determined sampling interval, figure 6, column 32 lines 53-67, column 33 lines 1-67.

As in claim 83, Kent teaches further comprising generating a second comparison parameter value from said first pixel coordinate estimate of said second touch-screen axis and said second pixel coordinate estimate of said second touch-screen axis, figure 6, column 32 lines 53-67, column 33 lines 1-67.

As in claim 84, Kent teaches further comprising comparing said second comparison parameter value to a pre-determined second threshold value, figure 6, column 32 lines 53-67, column 33 lines 1-67.

As in claim 85, Kent teaches further comprising selecting said second pixel coordinate estimate of said second touch-screen axis as a second valid pixel coordinate estimate of said second touch-screen axis if said second comparison parameter value is in a first definite relationship to said pre-determined second threshold value, figure 6, column 32 lines 53-67, column 33 lines 1-67.

As in claim 86, Kent teaches further comprising defining said second valid pixel coordinate estimate as invalid if said second comparison parameter value is in a second definite relationship to said pre-determined second threshold value, figure 6, column 32 lines 53-67, column 33 lines 1-67.

As in claim 87, Kent teaches further comprising generating and selecting said first valid pixel coordinate estimate corresponding to said first touch-screen axis before again attempting to generate and select said second valid pixel coordinate estimate corresponding to said second touch-screen axis, figure 6, column 32 lines .53-67, column 33 lines 1-67.

As in claim 88, Kent teaches further comprising making, at most, a pre-determined number of attempts to generate and select said second valid pixel coordinate estimate, figure 6, column 32 lines 53-67, column 33 lines 1-67.

As in claim 89, Kent teaches further comprising defining a "no touch" state as being detected and generating a "no touch" parameter value to indicate said "no touch" state as being detected when said second valid pixel coordinate estimate is defined as invalid, figure 6, column 32 lines 53-67, column 33 lines 1-67.

As in claim 90, Kent teaches further comprising said "no touch" state as being detected by generating a "no touch" parameter value to indicate said "no touch" state as being detected if said pre-determined number of attempts is reached and said second valid pixel coordinate estimate is still defined as invalid, figure 6, column 32 lines 53-67, column 33 lines 1-67.

As in claim 102, Kent teaches of a method of determining a touch screen coordinate for a touch screen comprising the steps of: turning on the driver of the coordinate to be measured, **column 32 lines 124, figure 5 item 80**;

measuring minimum, maximum, and raw position data for the coordinate being measured, **figure 6 item 100-138**;

and determining the coordinate position as a function of the raw position in relation to a coordinate range, **figure 6 item 140, column 32 lines 53-67, column 33 lines 1-67**.

As in claim 103, Kent teaches of wherein the range is determined as a function of the difference between the minimum and maximum position data, figure 6, column 32 lines 53-67, column 33 lines 1-67.

As in claim 104, Kent teaches of wherein the positioning determining step includes subtracting the minimum position data from the raw position data, figure 6, column 32 lines 53-67, column 33 lines 1-67.

As in claim 105, Kent teaches of wherein the raw, minimum and maximum position data are used to calibrate the touch screen without requiring specific calibration using input, figure 6, column 32 lines 53-67, column 33 lines 1-67.

As in claim 106, Kent teaches of including the further step of turning off the driver of a coordinate not being measured, figure 6, column 32 lines 53-67, column 33 lines 1-67.

As in claim 107, Kent teaches of wherein the foregoing steps are repeated for the other driver whose coordinate is to be determined, figure 6, column 32 lines 53-67, column 33 lines 1-67.

As in claim 108, Kent teaches of an apparatus determining a touch screen coordinate for a touch screen, **column 32 lines 124, figure 5 item 80**

comprising: means for turning on the driver of the coordinate to be measured, **column 32 lines 124, figure 5 item 80**;

means for measuring minimum, maximum, and raw position data for the coordinate being measured, **figure 6 item 100-138**;

and means for determining the coordinate position as a function of the raw position in relation to a coordinate range, **figure 6 item 140, column 32 lines 53-67, column 33 lines 1-67**.

As in claim 109, Kent teaches of wherein the coordinate range is determined as a function of the difference between the minimum and maximum position data, figure 6, column 32 lines 53-67, column 33 lines 1-67.

As in claim 110, Kent teaches of wherein the positioning determining means includes means for subtracting the minimum position data from the raw position data, figure 6, column 32 lines 53-67, column 33 lines 1-67.

As in claim 111, Kent teaches of wherein the raw, minimum and maximum position data are used to calibrate the touch screen without requiring specific calibration using input, figure 6, column 32 lines 53-67, column 33 lines 1-67.

As in claim 112, Kent teaches of further including means for turning off the driver of a coordinate not being measured, figure 6, column 32 lines 53-67, column 33 lines 1-67.

Conclusion

2. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **David L. Lewis** whose telephone number is **(571) 272-7673**. The examiner can normally be reached on MT and THF from 8 to 5. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bipin Shalwala, can be reached on **(571) 272-7681**. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (571)-273-8300.

3. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Examiner: David L. Lewis

January 20, 2008